Serial No. 10/613,057   Reply to Office Action Dated December 2, 2004
Attorney Docket No. BFGRP0304US   Reply Dated January 31, 2005

AMENDMENTS IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A brake gain-based torque controller, comprising:

an input for receiving a command torque indicative of a desired amount of brake torque applied to a wheel of a vehicle;

an input for receiving a signal indicative of a measured amount of brake torque applied to the wheel, ~~and~~

an output for providing a brake pressure output command to a brake actuator and a brake assembly which applies a brake pressure to the wheel based on the brake pressure output command, and

an input for receiving a pressure signal which is indicative of an amount of pressure applied to the wheel by the brake assembly from a pressure sensor operatively coupled to the brake actuator and the brake assembly for measuring the amount of pressure applied to the wheel,

wherein during normal braking the brake gain-based torque controller adjusts the brake pressure output command provided to the brake actuator and the brake assembly using a computed inverse brake gain based on the signal indicative of a measured amount of brake torque applied to the wheel and a measured pressure signal indicative of an amount of the brake pressure applied by the brake assembly to provide improved brake response during normal braking.

2. (Original) The brake gain-based torque controller of claim 1, wherein the brake gain-based torque controller is configured to limit the brake pressure output command based on the measured amount of brake torque applied to the wheel.

3. (Original) The brake gain-based torque controller of claim 1, further including:

an output for providing the computed inverse brake gain to scale the brake pressure output command, wherein the computed inverse brake gain is a function

Page 2 of 7

Serial No. 10/613,057   Reply to Office Action Dated December 2, 2004
Attorney Docket No. BFGRP0304US   Reply Dated January 31, 2005

of the brake torque applied to the wheel resulting from an amount of pressure
applied to the wheel by the brake actuator via the brake assembly.

4. (Canceled)

5. (Original) The brake gain-based torque controller of claim 1, wherein the brake
pressure output command is operative to control a pressure valve included in the brake actuator
and the brake assembly.

6. (Original) The brake gain-based torque controller of claim 1, wherein the brake
pressure output command is operative to control a flow valve included in the brake actuator and
the brake assembly.

7. (Original) The system of claim 1, wherein the vehicle is an aircraft.

8. (Original) The system of claim 1, wherein the vehicle is an automobile.

9. (Canceled)

10. (Original) The brake gain-based torque controller of claim 9, wherein the pressure
sensor is configured for measuring an amount of pressure of a fluid controlled by a flow valve,
the amount of pressure being indicative of an amount of brake force applied to the wheel.

11. (Original) The brake gain-based torque controller of claim 1, wherein the signal
indicative of the amount of brake torque applied to the wheel is a measured torque signal T_m.

12. (Original) The brake gain-based torque controller of claim 11, wherein the measured
torque signal T_m is fed into the brake gain-based torque controller to determined the computed
inverse brake gain based on the desired response characteristics of the brake gain-based torque
controller.

Page 3 of 7

Serial No. 10/613,057   Reply to Office Action Dated December 2, 2004
Attorney Docket No. BFGRP0304US   Reply Dated January 31, 2005

13. (Original) The brake gain-based torque controller of claim 1, further including:

    a gain block which receives as an input the pressure signal and outputs a signal that is scaled to the signal indicative of the amount of brake torque applied to the wheel.

14. (Original) The brake gain-based torque controller of claim 13, wherein the measured torque signal T_m is used as an upper limit of a limiter of the brake gain-based torque controller in order to prevent damage to a tire.

15. (Original) The brake gain-based torque controller of claim 1, wherein the brake gain-based torque controller limits the brake pressure output command based on the measured torque as a function of the measured torque.

16. (Original) The brake gain-based torque controller of claim 15, further including:

    circuitry which limits the brake pressure output command based on the measured torque as a function of the measured torque.

17. (Currently Amended) A brake control system, comprising:

    an operator command device;

    a brake gain-based torque controller coupled to receive as a first input, a command torque output of the operator command device;

    a brake actuator coupled to receive a brake pressure output command from the brake gain-based torque controller;

    a brake assembly coupled to a wheel to apply a pressure to the wheel based on an output of the brake actuator coupled thereto; ~~and~~

    a torque sensor coupled to the wheel to provide a torque signal to the brake gain-based torque controller indicative of the torque applied by the wheel to a vehicle, to which the wheel is coupled; and

Page 4 of 7

PAGE 4/7 * RCVD AT 1/31/2005 12:02:02 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/0 * DNIS:8729306 * CSID:216 621 6165 * DURATION (mm-ss):02-12

Serial No. 10/613,057   Reply to Office Action Dated December 2, 2004
Attorney Docket No. BFGRP0304US   Reply Dated January 31, 2005

    a pressure sensor operatively coupled to the brake actuator and the brake
assembly for measuring the amount of pressure applied to the wheel and for
providing to the brake gain-based torque controller an input signal indicative of an
amount of pressure applied to the wheel by the brake assembly,

    wherein during normal braking the torque signal is and pressure signal are
fed into the brake gain-based torque controller to determine a computed inverse
brake gain to calculate the brake pressure output command of the brake gain-based
torque controller in order to control the pressure to the wheel to achieve the
command torque output that improves brake response during normal braking.

    18. (Original) The brake gain-based torque controller of claim 17, wherein the brake
gain-based torque controller is configured to limit the brake pressure output command based on
the measured amount of brake torque applied to the wheel.

    19. (Canceled)

    20. (Canceled)